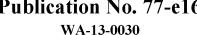
Segment No. 06-13-03

206/753-2353

### **Publication No. 77-e16**





### DEPARTMENT OF ECOLOGY

7272 Cleanwater Lane, Olympia, Washington 98504 MEMORANDUM

To: Ron Robinson

From: Mike Morhous

Re: Olympia STP

Class II Inspection

Date: November 9, 1977

Findings and Conclusions:

On July 7, 1977 Brett Betts and myself arrived at the Olympia STP to conduct the above referenced inspection. The Olympia STP is presently a primary wastewater treatment facility.

This inspection showed the STP having some difficulty in meeting interim NPDES limitations. The STP was in compliance with loading (1bs/day) limitations for  $BOD_5$  and TSS parameters. However the STP was slightly out of compliance with concentration (mg/l) limitations for the same parameters. Fecal coliform results were out of compliance, in one instance by a factor of two.

As a result of the 24 hour composites collected, the STP was providing a 10.4% reduction in  $BOD_5$  and a 70% reduction in TSS.

MM:ee

Class II Field Review and Sample Collection 24 Hour Composite Sampler Installations

Date and Time Location Sampler Installed 1. Inf. 7/7 at 0935 Inf. wet well (Oly. STP sampler) aliquot - 157 cc/187,500 gals 2. Unchl. Eff. 7/7 at 1000 Combined clarifier outfall (DOE sampler) aliquot - 250 mls/30 min. 3. Chl. Eff. 7/7 at 1010 Chl. cont. chamber outfall (Oly. STP aliquot - 157 cc/187,500 gals sampler) Grab Samples Date and Analysis Sample Location Time 1. 7/7 at 1030 Fecal coliforms Chl. cont. chamber outfall 2. 7/7 at 1100 Fecal coliforms Chl. cont. chamber outfall Secondary digester 3. 7/8 at 1030 Heavy metals and 4. volatile solids 5. 6. Flow Measuring Device Type - Venturi flume 2. Dimensions a. Meets standard criteria Yes No Explain: A/Mb. Accuracy check Actual Instan. Flow Recorder Reading Recorder Accuracy (% of inst. flow) 1. Could not check accuracy of flume 2 . 3. is within accepted 15% error limitations is in need of calibration Field Data Date and Sample Location Result Time Parameter 7/7 at 1030 Chl. cont. chamber outfall 0.45 ppm Total Chl. Residual Chl. cont. chamber outfall 0.70 ppm Total Chl. Residual 7/7 at 1100 #1 composite sampler location 8.9, 21.0°C, pH, temp, sp. cond. 7/7 at 1050 600 umhos/cm #2 composite sampler location 7.2, 20.8°C, 7/7 at 1040 pH, temp, sp. cond. 860 umhos/cm #3 composite sampler location 6.7, 21.6°C, pH, temp, sp. cond. 7/7 at 1030

1015 umhos/cm

In view of last year's review of the Olympia STP laboratory procedures which showed Asha Mhatre to be an efficient and competent laboratory person, a review of laboratory procedures during this inspection did not appear necessary.

The STP's BOD incubator was being repaired at the time of this inspection, therefore laboratory results were compared from a 24 hour composite split on August 11, 1977. The STP BOD<sub>5</sub> result was the same as the DOE lab result. However there appeared to be a discrepancy in the TSS results. Probable cause may have been inadequate mixing either of the composite sample before splitting or of the two separate half samples before analysis of the wastewater. However, an error in analytical procedures cannot be excluded as a possibility. For this reason an additional 24 hour composite will be split for comparison of TSS results if requested by your office.

It should be noted that the sludge sample collected during this inspection was not totally representative of secondary digested sludge. Sludge had been pumped into the secondary digester on July 7, 1977 and the sample was collected on July 8, 1977 after the mixing pump had been shut off.

The following table is a comparison of laboratory results from 24 hour composite(s) together with NPDES permit effluent limitations. Additional results pertinent to this inspection have also been included.

		505		01 <i>y</i> mp	oia STP		NPDES
7/28/77 DOE com- posite	Inf.	DOE Unchl. Eff.	Chl. Eff.	Inf.		Chl. Eff.	(Monthly average)
BOD <sub>5</sub> mg/l lbs/day	770	770	690 48,800				660 55,000
TSS mg/l lbs/day	528	132	158 11,170				150 15,822
Total Plant Flow MGD				8.48			Not to exceed 20
Fecal Coliforms (colonies/100 mls) at 1030 at 1100			380 500			·	250
* Total Chl. Residua (ppm) at 1030 at 1100			0.45 0.70				
8/10-11/77 Oly. STP Composite sample							
BOD <sub>5</sub> mg/1 TSS mg/1		Company of the control of the contro	650 350			650 171	
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		Regional Consideration and Security	COCCOMPTION TO SERVICE				Parameter - color
		T-Processor					

<sup>\*</sup> Field Analysis

<sup>&</sup>quot;<" is "less than" and ">" is "greater than"

	Secondary Digester	DOE					NPDES (Monthly Average)
% dry solids	3.8		i		t	ş	, , ,
% Volatile solids	32				A.C. Carrier and C		
Zinc (mg/Kg dry wt)	910						
Chromium (mg/Kg dry wt.)	53						
Lead (mg/Kg dry wt.)	220						
Copper (mg/Kg dry wt.)	300				The state of the s		
Cadmium (mg/Kg dry wt.)	1.8				A STATE OF THE STA		
Nickel (mg/Kg dry wt.)	24				rection of the state of the sta		many-company and a second
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ORIGINAL TO:

OLYMPIA LABORATORY

LAB FILES DATA SUMMARY Source OLYMPIA STP Collected By Morhous Date Collected 8-11-77 Log Number: 77- 4941 Station: 6.2 pΗ Turbidity (NTU) 800 Sp. Conductivity (umhos/cm) 1070 COD BOD (5 day) 650 650 Total Coliform (Col./100ml) Fecal Coliform (Col./100ml) NO3-N (Filtered) NO2-N (Filtered) NH3-N (Unfiltered) T. Kjeldahl-N (Unfiltered) O-PO4-P (Filtered) Total Phos. - P (Unfiltered) 953 Total Solids 438 Total Non. Vol. Solids Total Suspended Solids 350 171 Total Sus. Non Vol. Solids 50

Note: All results are in PPM (mg/L) unless otherwise specified. ND is "None Detected" (" is "Less Than" and ") " is "Greater

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OLYMPIA LABORATORY

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Note: All results are in PPM (mg/L) unless otherwise specified. ND is 'None Detected'

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